



USTDA

U.S. TRADE AND DEVELOPMENT AGENCY

Global Smart Grid

Emerging Investment Opportunities

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USTDA supports **project planning activities, pilot projects and reverse trade missions** to help infrastructure development projects obtain financing and reach implementation, while building partnerships between **U.S. companies** and **global project sponsors**. The following list highlights select USTDA activities that were designed to improve electricity transmission and distribution, and that present compelling opportunities for follow-on partnerships between U.S. and overseas stakeholders.

COLOMBIA

Intelligent Supervision and Advanced Control System

XM Compania de Expertos en Mercados S.A. E.S.P / Quanta Technology, LLC

USTDA Intervention

USTDA's assistance provided initial design of a conceptual Wide Area Measurement System for the Colombian power grid. The project involves the use of synchronized phasor measurement units and associated hardware at substations, along with system design work. This work will improve the ability to monitor and control the national electrical grid, allow transmission system information to be relayed faster and more reliably, and accelerate and automate responses to system anomalies.

Outcome

Project implementation will begin in 2015, based on the roadmap developed under USTDA's technical assistance. Financing for implementation is being provided through CREG, Colombia's regulatory authority.

Next Steps

The project sponsor, XM, is planning procurements for technologies and services related to supervision and advanced control systems, platform efficiency improvements and operations process design. These developments present strong opportunities for U.S. technology and service providers.

GHANA

ECG Smart Grid Applications

Electricity Company of Ghana Limited / Boreas Group, LLC

USTDA Intervention

USTDA's assistance is providing analysis and recommendations to develop an integrated smart grid system that would allow the Electricity Company of Ghana (ECG) to utilize real time data to manage supply and demand, resulting in more cost-effective service and quicker responses to network and system problems.

Outcome

ECG is implementing the study's recommendations related to SCADA, GIS and CIS upgrades, followed by asset and work management improvements. Partial funding for ECG network improvements is being provided through the African Development Bank and the World Bank, with opportunities for additional investment and financing partners.

Next Steps

As ECG continues to move forward with project implementation, upcoming procurements will present strong opportunities for U.S. technology and service providers, as well as investment partners.

INDIA

BESCOM Smart Grid

Bangalore Electricity Supply Company Limited / KEMA LLC

USTDA Intervention	Outcome	Next Steps
USTDA's assistance is assessing the integration of smart grid technologies into Bangalore Electricity Supply Company's (BESCOM) system, in order to improve efficiency, quality and reliability of the distribution network.	BESCOM is moving forward with a smart grid pilot in Electronics City, a 332-acre industrial park outside Bangalore that features more than 100 companies and numerous educational institutions. Wide-scale procurement and implementation is scheduled to occur in phases beginning in 2015.	Both the pilot and wide-scale implementation of the project present strong opportunities for U.S. suppliers, particularly in the areas of advanced metering infrastructure, meter data management, demand response, asset management, renewable integration and distribution automation.

North Delhi Power Limited Smart Grid

Tata Power Delhi Distribution Limited / Quanta Technology, LLC

USTDA Intervention	Outcome	Next Steps
USTDA's assistance provided analysis to support the implementation of smart grid technologies into Tata Power Delhi Distribution Limited's (TPDDL) power distribution system. The project is designed to promote efficiency gains, improve customer service, and improve the quality and reliability of service while reducing technical and commercial losses.	TPDDL is implementing the project, beginning with a pilot focused on Automated Demand Response and then moving to wide-scale deployment of AMI, field force automation and other smart grid components.	TPDDL's continued deployment of smart grid solutions and upgrades present strong opportunities for further U.S. technology and service providers, particularly in the areas of AMI, demand response and field force automation.

NIGERIA

Distribution Modernization and Power Loss Reduction for Newly Privatized DISCOs

Eko, Ikeja, Abuja and Benin DISCOs / KEMA LLC, Delphos International

USTDA Intervention	Outcome	Next Steps
USTDA's is providing a suite of activities in support of the newly privatized Nigerian distribution companies: Eko, Ikeja, Abuja and Benin. An initial Power Loss Reduction study evaluated grid monitoring and control systems to reduce power losses, and delivered training on smart grid technologies to enhance monitoring and improve power distribution. In October 2013, USTDA brought a delegation of DISCO representatives to the U.S. to further their exposure to U.S. smart grid technology solutions. USTDA is providing additional support for two new studies to develop specific recommendations on implementing smart grid technology for the Eko, Ikeja and Benin DISCOs. These studies are currently underway.	Each of the DISCOs are preparing to implement a variety of distribution technologies. As a direct result of USTDA's engagement, four distribution utilities have already begun commercial negotiations with U.S. companies, with several million in U.S. exports now in process. The DISCOs are actively seeking financing, technology and investment partners to move forward with project implementation.	Strong opportunities are available for U.S. providers of grid technology and services, as well as investment partners.

PHILIPPINES

MERALCO Power Distribution Modernization Pilot Project

Manila Electric Company

USTDA Intervention	Outcome	Next Steps
USTDA is supporting a pilot project to address system distribution issues related to demand response in order to reduce user demands, balance MERALCO's grid, reduce energy costs, implement demand response, and upgrade and integrate voltage and communications infrastructure. This study builds on a long history of successful partnership between MERALCO and USTDA, with past projects covering SCADA, power quality, and distribution automation and network management.	The current pilot project is ongoing, and project implementation is anticipated to commence soon after the study is completed. MERALCO continues to make system upgrades on an ongoing basis, utilizing many of the recommendations from prior USTDA studies as well.	Significant opportunities exist for U.S. technology and service providers in both the immediate and long term. In the short term, MERALCO is continuing to upgrade distribution automation and network management systems. Over the next 3-5 years, significant upgrades are expected in the areas of AMI, demand response and communications infrastructure.

SOUTH AFRICA

Ekurhuleni Smart Metering

Ekurhuleni Metropolitan Municipality / Xtensible Solutions

USTDA Intervention	Outcome	Next Steps
USTDA provided assistance to support the implementation of advanced metering technology into Ekurhuleni Metropolitan Municipality's (EMM) service area. This project is designed to improve the accuracy of meter reading, improve bill collection, reduce delays in billing, shorten response times for outages and enable the utilization of time-of-use tariffs to provide consumers with financial incentives to reduce power usage.	EMM is planning to implement a pilot project in the summer of 2015, with further deployment to follow. Procurements for the pilot and the larger smart metering implementation process are expected to include consulting services, meters/AMI, asset and outage management systems, data analytics software, and back office support from solution and application providers.	Significant opportunities are expected to result from the pilot project and from full project implementation. Procurements are expected for smart meter systems and technologies, as well as for consulting services. Procurements will be done through open competitive tenders and will be publicly advertised on EMM's website.

TURKEY

Smart Grid in Electricity Transmission

Turkish Electricity Transmission Corporation (TEIAS)

USTDA Intervention	Outcome	Next Steps
USTDA's assistance helped to identify gaps in the Turkish Electricity Transmission Corporation's (TEIAS) current use of smart grid technology and prepare implementation guidelines for new technologies. Technology recommendations were designed to allow TEIAS to extend its SCADA system throughout its entire electricity transmission network.	TEIAS has begun implementing components of the project, including SCADA system upgrades. The transmission grid has been extended by 1,000 substations, approximately half of which are connected to the SCADA system.	TEIAS is rapidly moving forward with procurements to support project implementation, presenting strong opportunities for U.S. technology and service providers in the areas of SCADA improvements. Additionally, TEIAS will be purchasing several hundred remote terminal units. These will be bid competitively according to internationally recognized competitive bidding standards.

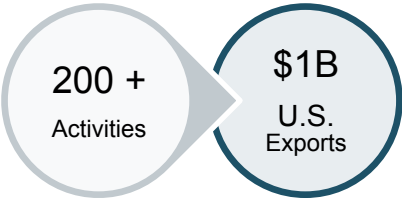
VIETNAM

National Power Transmission Information Technology Roadmap
National Power Transmission Corporation (EVNNPT) / Tangible International, Inc.

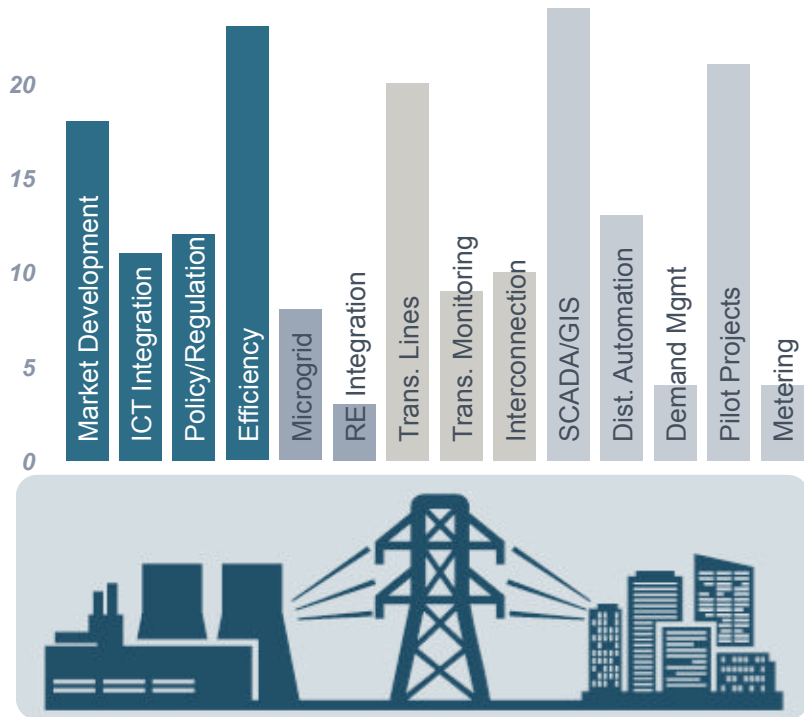
USTDA Intervention	Outcome	Next Steps
USTDA is providing assistance to help the National Power Transmission Corporation develop an information technology and smart grid development plan to guide them through a number of transmission upgrade investments in order to modernize Vietnam's electrical grid. The study is analyzing advanced information technologies, including smart grid applications, automation and other transmission management technologies.	USTDA is continuing to provide support for this project. Project implementation has not yet begun, but is anticipated to progress rapidly following the completion of the study.	U.S. companies are anticipated to be strongly competitive in supplying technologies and services to support the implementation of this project. Tenders are anticipated in the areas of AMI, SCADA/GIS, substation automation, asset management systems and consulting services.

USTDA SUPPORT FOR GRID DEVELOPMENT

USTDA's support for over 200 activities across key areas of the grid have helped to generate over \$1 billion in U.S. exports to date.



NUMBER OF USTDA PROJECTS BY SUBSECTOR



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